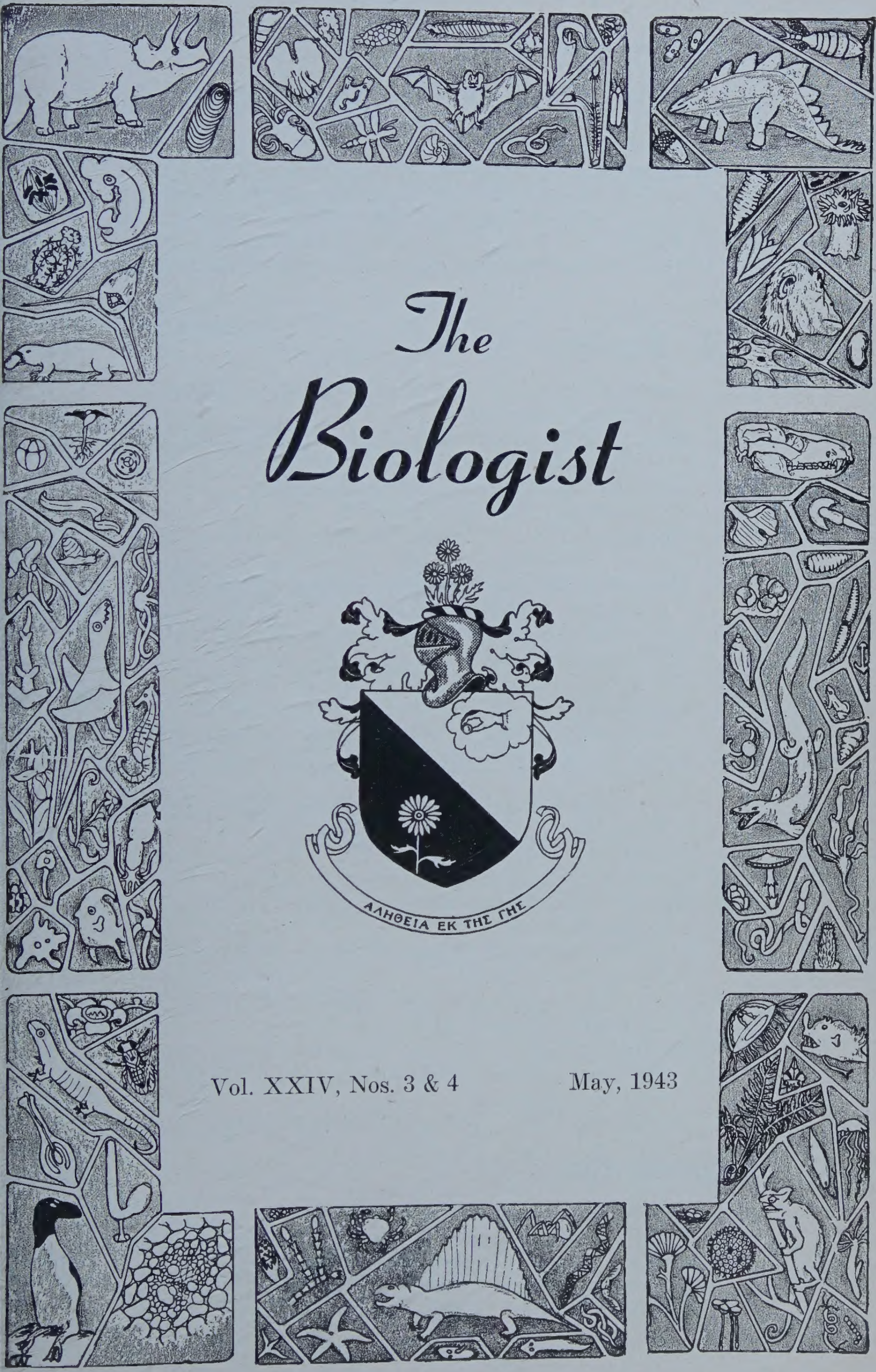

The Biologist

Vol. XXIV, Nos. 3 & 4 May, 1943

Phi Sigma

BIOLOGICAL HONOR SOCIETY

"The object of Phi Sigma is to promote interest in biological research. Although originally designated as an honorary biological research society, it should not be considered as a working guild of biologists interested in research. In effect, election to Phi Sigma should be an opportunity for better work, rather than merely election to an honorary society."

Mile Posts:

1915	March 17, Alpha Chapter organized, Ohio State University, Columbus.
1916	May, Central Governing Body organized, BIOLOGIST first issued.
1917	June, last War-time BIOLOGIST issued.
1921	February, BIOLOGIST revived.
1924	December, First National Meeting, Constitution revised, Washington, D.C.
1925	December, Second National Meeting, First Science Program, Kansas City.
1926	December, Third National Meeting, Second Science Program, Philadelphia.
1927	December, Third Science Program, Nashville.
1928	December, Fourth National Meeting, Coat-of-Arms adopted, Fourth Science Program, New York.
1930	January, Council Meeting, Ritual Revised, Norman, Okla.
	December, Fifth National Meeting, Fifth Science Program, Cleveland.
1931	Phi Sigma Letters Registered, U. S. Patent Office.
1932	December, Sixth Science Program, Atlantic City.
1933	June, Sixth National Meeting, Seventh Science Program, Chicago.
1935	December, Seventh National Meeting, Eighth Science Program, St. Louis.
1937	December, Eighth National Meeting, Ninth Science Program, Indianapolis.
1939	December, Ninth National Meeting, Tenth Science Program, Silver Anniversary, Ohio State University, Columbus.
1942	December, Tenth National Meeting, Dallas, Texas.

Expansion:

The Constitution provides that: "An active chapter may be established in any institution of learning which requires for graduation the equivalent of four years of collegiate work, and which is equipped with facilities for research work. - - - - Any petitioning group must be active for at least one year before it may be granted a charter."

THE BIOLOGIST

Vol. XXIV Denver, Colo., May, 1943 Nos. 3 & 4

Published by the Phi Sigma Society, an organization devoted to the promotion of interest in biological research, founded at Ohio State University, March 17, 1915. The Biologist is the official quarterly publication of the society, issued ordinarily in October, December, February and April, as a medium of exchange between chapters, as an interpreter of Council policies, and as a stimulus to the fellowship in science for which Phi Sigma stands.

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Pittsburgh, Pennsylvania

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Directory

OF ALL ACTIVE AND INACTIVE CHAPTERS

The list of chapter officers for this school year will be found in the CHAPTER NEWS section of Vol. XXIV, No. 1.

ALPHA
Ohio State University, Columbus, Ohio, founded March 17, 1915, (Inactive).

BETA
University of Michigan, Ann Arbor, Michigan, founded June 3, 1916.

DELTA
University of Maine, Orono, Maine, founded January 27, 1917, (Inactive).

EPSILON
University of Denver, Denver, Colorado, founded March 5, 1917.

ZETA
University of Wisconsin, Madison, Wisconsin, founded May 30, 1917.

ETA
University of Akron, Akron, Ohio, founded April 20, 1921.

THETA
Michigan State College, East Lansing, Michigan, founded April 9, 1921, (Inactive).

!OTA
Washington University, St. Louis, Missouri, founded May 28, 1921.

KAPPA
University of Kansas, Lawrence, Kansas, founded May 31, 1921.

LAMBDA
Montana State University, Missoula, Montana, founded May 4, 1921.

MU
University of California, Berkeley, California, founded April 27, 1922.

NU
Washington and Jefferson College, Washington, Pennsylvania, founded May 11, 1922.

XI
University of Nebraska, Lincoln, Nebraska, founded May 3, 1934, (Inactive).

OMICRON
University of North Dakota, Grand Forks, North Dakota,
founded May 26, 1924, (Inactive).

PI
Emory University, Georgia, founded January 3, 1925.

RHO
University of Illinois, Urbana, Illinois, founded March 28, 1925.

SIGMA
University of Florida, Gainesville, Florida, founded December 4, 1925.

TAU

Duke University, Durham, North Carolina, founded March 4, 1926.

UPSILON

Miami University, Oxford, Ohio, founded May 7, 1926.

PHI

University of New Hampshire, Durham, New Hampshire, founded May 21, 1926.

CHI

Montana State College, Bozeman, Montana, founded February 11, 1927.

PSI

University of Washington, Seattle, Washington, founded April 7, 1928.

OMEGA

University of Oklahoma, Norman, Oklahoma, founded March 24, 1928.

ALPHA ALPHA

University of Southern California, Los Angeles, California, founded May 17, 1930.

ALPHA BETA

Mount Union College, Alliance, Ohio, founded May 17, 1928.

ALPHA GAMMA

University of South Dakota, Vermillion, South Dakota, founded May 15, 1928, (Inactive).

ALPHA DELTA

Lawrence College, Appleton, Wisconsin, founded March 7, 1929, (Inactive).

ALPHA EPSILON

University of Pittsburgh, Pittsburgh, Pennsylvania, founded March 23, 1929.

ALPHA ZETA

College of William and Mary, Williamsburg, Virginia, founded April 19, 1930, (Inactive).

ALPHA ETA

Oklahoma Agricultural and Mechanical College, Stillwater, Oklahoma, founded March 13, 1930.

ALPHA THETA

State College of Washington, Pullman, Washington, founded May, 1930.

ALPHA IOTA

Bucknell University, Lewisburg, Pennsylvania, founded January 9, 1932.

ALPHA KAPPA

Hunter College, New York City, founded January 8, 1932.

ALPHA LAMBDA

University of Utah, Salt Lake City, Utah, founded February 13, 1932.

ALPHA MU

University and State College of Oregon, Eugene-Portland-Corvallis, Oregon, founded November 18, 1933.

ALPHA NU

University of New Mexico, Albuquerque, New Mexico, founded April 21, 1935.

ALPHA XI

Rhode Island State College, Kingston, Rhode Island, founded May 17, 1935.

ALPHA OMICRON

Marquette University, Milwaukee, Wisconsin, founded June 18, 1938.

ALPHA PI

University of Colorado, Boulder, Colorado, founded May 24, 1941.

Nature Education in the Pittsburgh Parks

ROY BLACK AND J. R. STECK*

When the early settlers came west over the Allegheny Mountains, the Indian trails led them to a point where two rivers joined to form a third. There they looked upon hillsides covered with green forests abounding in game, and rivers and streams filled with fish—nature at its best. Soon a settlement sprang up where the Allegheny and Monongahela Rivers met to form the Ohio, a town destined to be called the "Work-shop of the World." The three rivers, plus rich coal deposits, led to the rapid growth of Pittsburgh. Much of this growth was accomplished at the expense of the natural resources which were so plentiful when Pittsburgh was first settled. Because the natural resources were so abundant people spent this heritage easily without the foresight that characterized certain of Pittsburgh's early naturalists. It is interesting to recall the story of Jonathan Chapman, better known as Jonny Appleseed. This early (1775-1847) itinerant naturalist saw ahead to the time when the cutting of trees would exhaust the forest and a spring would come when children would no longer be able to see and smell the fragrant apple blossom.

This unusual character devoted his life to the practicing and preaching of conservation, a life which has borne fruit. As we record the development of Pittsburgh, other names appear on the roll of naturalists. To the list should be added those foresighted individuals who gave to a growing city tracts of land to be used as parks. Whether consciously or unconsciously, these people were following the footsteps of Pittsburgh's first naturalist, Jonny Appleseed. These park areas are today the only remnants to remind us of what our early ancestors looked upon from the point. They are oasis in an industrial city whose river banks are lined with mills belching forth black smoke into the air.

Today in Pittsburgh there are 1,971 acres of field and woods set aside as public parks. They are scattered throughout the entire city with a major park of over 350 acres in each section. To this group we might add a fifth park on the South Side of about a hundred acres. These parks are characterized by wooded hillsides and valleys suitable for abundant plant and animal life. There are facilities for picnicking and physical recreation, for the most part so located that they do not interfere with the more natural areas of the parks. In recent years increased leisure time has placed a heavy burden on the parks, with use resulting in abuse. Park recreation facilities, trees, shrubs, flowers, and wildlife suffered alike. The public did not understand just how much this destruction meant to each individual park user. How was the Park Department to cope with such a situation? One obvious answer was to educate the public.

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*Mr. Black is resident naturalist in Frick Park in Pittsburgh, and Mr. Steck occupies the position of Park naturalist. Both are members of Alpha Epsilon Chapter.

In the fall of 1933 the Emergency Education Council sponsored an experimental adult program of nature lectures and field trips in the vicinity of Frick Park. The program was an immediate success, and the following spring those who had attended regularly organized to assist in planning future programs and in spreading the doctrine of the conservation of nature's beauty. The schools at the edge of the park began to participate in the program by planning field trips and nature lectures. This new idea grew rapidly and had a remarkable effect on the way the community used Frick Park. Realizing that the value of this park appreciation should be spread throughout all parks, the City Park authorities and members of the Science Department of the Board of Education planned a park appreciation program to be taught in the nature classes of the city schools.

Just how was the proper use and respect of parks to be taught? Under the direction of a nature photographer a series of 16 m.m. motion pictures were filmed on park trees, wildflowers, birds, animals and activities. These pictures, shown by park representatives, were used to arouse student interest with the aim of planning field trips in the parks to further the teaching of this new appreciation.

The teachers received this new program with enthusiasm, and soon the demands for talks and field trips had increased to such a degree that the need for specially trained men to carry on the program was apparent. In the fall of 1935 the first naturalist was added at Frick Park; he was soon followed by a naturalist at Riverview Park and later another at Schenley Park. With a staff of trained men the nature education program grew rapidly.

The major duty of the park naturalist is the cooperative work with the schools. New subject material is constantly being added to the film library and the use of color has improved the teaching value of these films. Recently the nature staff has experimented with the use of the new 35 m.m. slides. Where motion is not a necessity, and where natural color is desirable, these new slides are proving their worth. The first trip is still the most valued teaching aid, and each year more teachers are bringing their classes into the parks. During the last few years the school program has extended to parochial and private schools, as well as suburban schools. This program with the youth of the community does not stop with schools. The park naturalists are called on to assist with the nature program of the Boy and Girl Scouts and other youth groups interested in the out-of-doors. During the vacation months, with such organizations conducting day camp groups in the city parks, the naturalists were given an ideal opportunity to further conservation. These contacts were especially valuable because more time could be given to the program and the contacts made more personal.

With a well-balanced youth program, the next step was to interest the adult population. Following the example of the original program in Frick Park, each naturalist conducts Sunday morning nature walks in the three major parks. These walks are general in nature and planned for the average park visitor. Because nature buildings were available in Frick and Riverview

Parks, the adult program developed more rapidly. Guest lecturers were invited to give talks on natural science and travel. These talks have proven themselves to be very popular. In Frick Park, under the sponsorship of the Frick Park Naturalist Society, a weekly program of lectures and social activity has been successful. Lecture demands by the parent teachers associations, garden clubs, civic groups, and other organizations have given the naturalists splendid opportunities to spread the doctrine of park appreciation.

A very popular part of the nature program centers in the Frick and Riverview Trailside Museums. These buildings are not museums in the strict sense of the word and should be regarded as covered nature trails. The displays are labeled with information concerning the relationship of man to that particular animal or plant, whether beneficial or harmful. With rare exception all displays concern nature materials native to the park or the region. During the past few years collections of living animal and plant life have been added to supplement conventional types of exhibits. Many of the animals are tame enough to be handled thus adding to their teaching value. Many visitors attracted into the parks for their first visit by these museums have become enthusiastic in their interest in the parks.

In addition to a well-organized adult and children nature program the nature education staff serves in other capacities. Many miles of nature trails have been labeled for the convenience of the park visitor and student. These labels have aroused the interest of trail walkers and have caused many to visit the museums and ask questions.

Under the supervision of the naturalist, each of the large parks has in part become a wildlife sanctuary. Wildlife feeding has become a very important phase of the naturalist's duties and it has resulted in a greatly increased bird and animal population. Over a hundred different species of birds have been reported in the three largest parks in the city. The numbers have increased to such an extent that people living on the edge of the parks are reporting more birds are visiting their backyards. Many a walker has been initiated into nature appreciation by a friendly squirrel who begged for a hand-out.

It must be realized that this brief article is merely a background and short sketch of the Pittsburgh Bureau of Parks' nature education program. The most important duty of the naturalist is the making of contacts with the youth of the community. Through the medium of field trips boys and girls have been taught how to use the parks. The adult program has interested many people in nature as a hobby. Today, through the work of the nature program, despite increased use of the parks, the attitude of the public is improving—they use but do not abuse.

GRAY SQUIRRELS IN FRICK PARK

About six years ago the old timers in Frick Park began the slow, patience trying process of taming the then wild Gray Squirrel, native of Pennsylvania.

The old timers were men, some unemployed, some retired, others using their leisure and vacation time, who loved the woods and had the keen desire to bring Nature's wild-folks closer to themselves and the visitors to Frick Park. Foremost amongst these men were "Old Martin, Old Sam, John Schott, Mr. Fry, Mr. Ted Messenger," and others to the number of about a dozen who called themselves the "Twelve Apostles" and who have been known as such for years.

Gradually ever so gradually the squirrels came closer and closer as they became accustomed to the men, who were armed only with feed and bushels of patience.

The park itself blended into the natural habitat of the squirrel. Following the strict stipulation in the will of the late Henry Clay Frick, the park remained as natural as human hands could direct. With old trees for homes, logs, and dense natural underbrush for cover these squirrels were not exposed to the open conditions prevalent in other City Parks.

Finally certain squirrels came and actually would take food from the extended hand, usually the squirrel remaining in the tree. Then gradually this and that squirrel began to clamber up and jump from one to the other of the various men.

The squirrels were soon recognized as individuals and named: Rags came from a long way down thru the park to the feeding bench, Zep was a jumper, Jimmie was very friendly, One-eyed Connely, and so on, until the squirrels began to follow the men and to come when called. Some even attempted to follow the men to their homes blocks from the park itself.

It was hard to make people believe these squirrel taming stories and finally Ted Messenger secured at his own expense moving picture equipment and began the long process of recording the actions of the squirrels and other animal life in the Park.

During this training of the squirrels one might mention the training of the birds taking place in a similar manner. First came the Nuthatches, then curious enough the Chickadee came second, then the Tufted Titmouse, the Quail, and finally the wary Cardinal had been coaxed to take food from the hand.

The Striped Ground-Squirrel, Chipmunk (Tamias) soon followed in the wake of the squirrels and birds, until moving pictures recorded for all time the friendly action of this wary mammal.

Other men and women, even children, joined the group until now the major park attraction is the feeding of the squirrels and birds.

Few if any seem to realize what these old timers have done for the Park and for bringing nature to the people, trained and full of confidence and trust.

Squirrels now make regular visits to many houses bordering on the Park, clambering up the wall or over the porches, even waking up the residents with their chatterings to be fed.

Foremost amongst the women is Mrs. C. L. Kirk who comes in early, armed with bundles of nuts, and other seeds; and goes home late in the afternoon or evenings, spending the entire day feeding, coaxing, and training birds and squirrels.

One must not overlook the splendid cooperation on the part of the Frick Park Supervisor, Mr. Harvey Crass, who has cooperated at every turn with those who desire to aid materially to the natural history of the Park, and who formed the backbone of a strong resistance against those who desired to destroy in any way, the natural beauty that was part of the Park. It was his foresight and insistence that started the active Nature Program in Frick Park which will probably become permanent in the near future.

All of these factors make up the whole of a desirable type environment necessary for the complete preservation of the present conditions in Frick Park.

LeRoy Black

HIGHLIGHTS ON FIELD TRIPS MADE BY THE NATURE TRAINING SCHOOL FROM ITS BASE AT LAKE TERRA ALTA

This article is to show the kind of work which has been done by the Nature Training School at Oglebay Park, West Virginia. After two weeks spent at the Park the school goes into actual camp in Preston County on the shores of Lake Terra Alta. The trips made by the students and teachers vary in nature from low swamps and glades to Spruce Knob, the highest point in West Virginia.

A trip is made to Cranesville Swamp. There the students have an opportunity to observe the characteristic plant distribution of a swamp. Towards the center and gradually filling the open water are mosses, Sphagnum and Polytrichum, which soon give way to sedges and grasses; toward the outer edges of the swamp where increasing dryness is apparent there are alder thickets and farther still laurel and rhododendron grows in profusion. The hemlocks and spruces which can not live in extremely moist conditions appear next and are followed on the outskirts of the swamp by the dominating hardwoods.

As no Nature School Camp is complete without a trip into the Swallow Falls region a trip is made there. The trails are followed here and a study of the trees is made and a list of birds taken. Swallow Falls is not high, but the Muddy Creek Falls formed farther down the stream by an inflowing branch are comparable in beauty and height to the Black Water Falls.

If time permits a short trip is made to Mountain Lake Park in Garret County, Maryland. The geological nature of the region is explained. In the distance the Alleghany Plateau can be observed. A walk about the lake discloses large areas of Cornus paniculata and other interesting plants. Many birds are listed. On one trip a Marsh hawk was observed wheeling around and above a certain tree. A nest naturally was suspected and when found it contained two young birds and an egg or two.

The drive from Terra Alta in Preston County to the Black Water region in Tucker County makes one of the most interesting trips on account of the panorama of the mountains rising out of the mist. Black Water Falls is West Virginia's largest falls. The blackish water caused by the color of the rocks underneath drops sixty-five feet where it is tossed into the air white and foaming. Among the rocks at the base of the falls potholes can be seen which have been formed by the stones caught in the current being washed around and around, gradually wearing out these pot-like formations. The Black Water Canyon is comparable in every way to the New River Canyon in the southern part of the state. The geologic formation of the canyon is interesting. The rocks are of the Pottsville series of sandstones. The valley is a typical V formation, with projecting spurs which prevent a perfect view of the river, which drains the whole of the Canaan valley. As the drive continues the black waters of the Cheat can be seen and one is reminded of this river's three forks, Black, Glady and Laurel. In driving away from the falls a stop can be made a short distance from Davis on Canaan Mountain. Below lies Canaan Valley, which contains about 25,000 acres, 15,000 acres of which are uninhabited. This valley is a show spot for geologists. Here is where an anticline has had its top "knocked off." The valley is almost a perfect oval except at the south end. The valley received its name from an old hunter who had been following a bear across the mountain. When he beheld the valley below him he called it the valley of Canaan, because it was the most beautiful valley he had ever seen. A deadly poisonous plant, White Aconite is found here.

During these trips the students are divided into small groups according to their varied interests and extensive study is made of the plant and animal life of the territory as well as its physical makeup.

Question: What are we doing as individual chapters for the men in the service?

Answer: From Alpha Lambda Chapter.

News Letter as a supplement to the information in the Chronies. All members of the chapter are reporters. All members in the service keep the chapter informed when their address changes. A list of the names and addresses is published in the news letter. Information is given about the events held by the chapter, the names of the new members are published and any information which can be published about the men in the services is given so that no matter where the men are they have information about what the others are doing. Cartoons are added.

Excerpt from the News Letter:

"From North Africa Wally Bradley writes that he has had a very adventurous time. He sent a photograph of himself with one of the natives. Incidentally, he is the official cartoonist for this issue. Wally reports that ocean voyages are fine: they make you appreciate good old *terra firma*. He has fond memories of "the English gals (the wolf) and of Christmas holly trees, fish and chips, ha' pennies and arf' crowns and red-faced urchins."

According to Wally, in North Africa a five-cent chocolate bar will buy "anything from a donkey to a dozen desert dames." Better stock up on chocolate before you go overseas. "Wine," says Wally, "is the principal beverage consumed by natives and invaders. The Frenchmen claim that water rusts the kidneys. After tasting the water here I am inclined to agree with them."

Thanks for the fine letter, Wally. Such communications are wonderful for the morale of the citizens.

Why can't the rest of us do something for the members in the service?

* * *

News Letters

Eta

—The University of Akron

According to Dr. Walter C. Kraatz, Head, Biology Department, Eta Chapter is kept busy getting new officers to take charge as so many of the men have been called into the services or into other work. Richard Weaver, the Vice President is signed up for a commission in the navy.*

Alpha Epsilon

—University of Pittsburgh

Dr. Tryphena Humphrey, Assistant Professor of Medicine and Dr. John C. Donaldson, Professor of Anatomy, addressed the members of Alpha Epsilon at the January meeting. Dr. Donaldson discussed "Some Research Methods in Anatomy" and illustrated his talk with models, preserved specimens and projected photomicrographs of developing hypophyses. One model was done by a student in his spare time. It had taken the latter, Dr. Renton, two summers to accomplish this project. Dr. Donaldson prized the model because of the zeal, tireless energy and scientific interest displayed by this worker.

Dr. Humphrey discussed The Olfactory and Accessory Olfactory Formations in reptiles, birds and mammals. The former went on to say that "only the olfactory formation is present in some forms such as the horned toad, the American alligator and the birds, but both olfactory and accessory olfactory formations may be more or less well represented, as in snakes, the Gila monster and most mammals (cat, mouse, squirrel, for example).

In other mammals the accessory olfactory formation is extremely minute (shrew) and in the macque, if present at all, it is vestigial in character. It is entirely absent in the bat and in adult man.

In human fetuses, the accessory olfactory formation may be fully developed at 18½ weeks of menstrual age or may partially differentiate only to retrogress to a varying degree at an even earlier age (14 weeks, for example). The olfactory formation, however, shows no evidence of retrogressive changes at 18½ weeks, but on the contrary is better differentiated than in adult man. No satisfactory explanation for the degeneration of the vomeronasal organ and the accessory olfactory formation in man is available at present."

The Chapter's Initiation Banquet was held in February at the Faculty Club. At the dinner, President Thompson presented to Dr. Edna Higbee, a bouquet of red roses in appreciation of the loyal service she has rendered Alpha Epsilon.

We were very pleased to have the following join our organization: Paul Francis Cerchiara, Donald B. Crowe, L. James Lewis, Harold Charles O'Brien, Jean Lewis Zukas, Robert C. Backus.

After the Initiation ceremony the remainder of the evening was enjoyed by playing bridge, jig-saw puzzles and just visiting.

Alpha Epsilon is very proud of President Walter Leland Thompson, who has recently acquired the doctor of philosophy degree.

ELEANORE REED,
Corresponding Secretary.

Alpha Lambda

—University of Utah

The Alpha Lambda Chapter, hard hit by the war, has, nevertheless, managed to remain active. The few remaining active members have held several business meetings and public meetings. At one of the latter Dr. Walter P. Cottam of the University of Utah Botany Department gave an illustrated lecture on "The Flora of Utah." Nearly a hundred people attended this lecture. At another public meeting Professor Elmer Smith of the Anthropology Department lectured on the subject, "The Relationship between the Biological and Cultural Studies of Man." In the near future Mr. Lee Kay of the Utah State Fish and Wildlife Service will give a lecture on "Conservation," illustrated with colored movies.

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*So many of the Chapters have been having this trouble. I do wish some one member of each chapter would assume the responsibility of summing up the situation on their campus and sending the report in to me (The Acting Editor) so that I may have some idea of what our respective chapters need. No appeal has been made for material or letters this year as I have not received the names of any officers or any other person designated by each chapter to keep the chapter alive for the duration.

As would be expected with most of the chapter membership in the armed services, much of Alpha Lambda's time has been spent in activities related to the war. A project is now underway involving the soliciting from the people of the city their iron fences to be contributed to the scrap metal drive.

Copies of the Utah Chronical, the University of Utah Newspaper, are sent weekly to all members of the Alpha Lambda Chapter who are in the services. These members also received Christmas cards signed by their friends among the students of the Biology Department and by the teachers in the department. Alpha Lambda recently inaugurated a publication called the "Phi Sigma Newsletter," which conveys to members in the services Phi Sigma and Biology Department news as well as news of the welfare and, where possible, the whereabouts of all other members who are in the services.

The following Alpha Lambda Chapter members are on our honor roll of service men: Clifton M. Greenhalgh, Lewis T. Nielson, Rowland E. Gaumer, Charles S. Richards, Keith R. Kelson, Rudolph Glauser, Jack H. Berryman, James B. Duncan, Kenneth R. Brizzee, John D. Vasques, Henry W. Setzer, George W. Bradley, Jack Woolstenholme, Calvin McMillan, Irving B. McNulty, Albert W. Grundmann, James Parker and Martin B. Harris. Melvin R. Nauman was killed in action in the Pacific recently. Practically all of the remaining active male members of the chapter are in the Army or Navy enlisted reserves. Dr. W. W. Newby, one of our faculty members recently was commissioned Second Lieutenant in the Army Air Corps.

In spite of wartime conditions, the Alpha Lambda Chapter was able to pledge and initiate fifteen students and one faculty member. These are: Stanley Mulaik (Faculty member), Leon L. Cowles, Martin B. Harris, George K. Todd, Frances Bullock, Stratford Wendelboe, Laurence Lister, Jacob Z. Richardson, Poulson Hunter, Rodney Guy Hoff, Dorothea Mulsik, Forsyth Burt, Dean Ellertson, Clay Wilcox, John B. Van den Akker and James Parker.

This list includes, for the first time in Alpha Lambda history, some sophomores. The group of new members includes several teaching fellows in the Biology department, as well as some other students who are already doing some research.

The annual initiation banquet was given in fine style at the Hotel Newhouse, as has become traditional. Dr. William H. Behle acted as master of ceremonies; Dr. W. P. Cottam, newly elected faculty sponsor, introduced the new members; J. Poulson Hunter responded for the new members, and Chapter President George F. Edmunds replied for the old members. After the banquet dancing was done.

Frances Bullock was recently elected chapter treasurer to replace Calvin McMillan who joined the U. S. Army Signal Corps.

THELMA TERRY,
Chapter Secretary.

* * *

Book Reviews

Except for the signed reviews, the thumbnail sketches of current biological literature appearing in this section are not meant to be exhaustive or deeply critical. They aim to survey the rapidly growing field of biology. Naturally these reviews represent the candid opinions of various readers not necessarily those of the National Council, nor even those of the Editor.

ADHESIVES, By FELIX BRAUDE. *Chemical Publishing Company, Inc., 1943. xiv plus 154 pp. Price $3.00.*

This practical book should prove most useful to anyone interested in the subject covered. It is not a book for the chemist or physicist; it contains little theory. It is well organized and contains many formulae, tables, and references. As a book "written primarily for the practical man" it is certainly to be recommended.

A. I. ORTENBURGER

NEW TECHNICAL AND COMMERCIAL DICTIONARY (Nuevo Diccionario Technico-Commercial), by ANTONIO PEROL GUERRERO. *Chemical Publishing Company, Inc., 1942. ix plus 600 pp. Price $10.00.*

This dictionary of 50,000 words is the result of many years work, and yet it is up-to-date as it includes many new words and meanings. It is made up of three parts: Part I—Spanish—English; Part II—English—Spanish; and Part III—Conversion Tables. It is a volume of 600 pages and it will be of great value in many technical fields such as engineering, radio, mining, and the textile industries. Many modern words such as are now used in mechanized warfare, aviation, and meteorology are included. As a really useable dictionary it should help eliminate misunderstandings in communications and thus assist in developing a better understanding between the Americas.

A. I. ORTENBURGER

MAN IN STRUCTURE AND FUNCTION by FRITZ KAHN—Translated by GEORGE ROSEN, M.D. *Published by Alfred A. Knopf—New York. 2 volumes, 1943. Price $10.00.*

A book that should be in the hands of every biologist and zoologist, and should be a welcome addition to the library of medical students as well. The explanations of each subject are given in a concise manner. The explanations, examples and illustrations are clear cut and up-to-date. Man and his functions are explained in modern language. All the benefits of modern research are used in the explanation of man as the centre of the world. With the use of the discoveries of modern science the study of man and the organization of human life can be disclosed to us and a new era of human biology is at hand. The contents of the two volumes are divided into ten parts. These parts deal with From Electron to man, the Skeleton, The Musculature, the Circulation of the Blood, Respiration, Digestion, Nutrition, the Nervous System, the Skin and Sensory Organs and Sex Life. These subjects are dealt with in a manner that brings out the structure and function by showing how man lives, acts and thinks, man at his workbench and at the family table. It is "the modern wisdom of life which enables the one acquainted with it to shape his life according to the precepts of modern science, to increase his abilities, to maintain his health, to overcome disease, and to live longer and more actively than his ancestors." An excellent book for a text or as a reference book depending on the type of course being given.

E. HIGBEE.

MEDICAL PARASITOLOGY by JAMES T. CULBERTSON, *Columbia University Press, 1942. xii plus 285 pages. Price $4.25.*

Medical parasitology is a resume of the important problems concerning human parasites. The general topics of infection, epidemiology, natural resistance and acquired immunity, diagnosis, specific therapy, and prophylaxis are discussed in the first part of the book and in the second part these subjects are related to the important human parasites. It concludes with an appendix of technical methods. Excellent illustrations are included. This book will prove exceedingly useful especially at the present time when condensed field books are needed.

J. TEAGUE SELF

COMMON EDIBLE MUSHROOMS by CLYDE M. CHRISTENSEN. *University of Minnesota Press, Minneapolis. Pages 123. Price $2.50.*

How many times have we or our friends, wondered which particular mushrooms were edible and which were poisonous? How many times have we wondered how to prepare those species which were edible? All of these, as well as many other everyday questions are answered in Dr. Christensen's book.

He has attempted to tell us in simple language and by means of excellent photographs which particular mushrooms to eat and which not to eat. In achieving this he has gone to great pains to give us all the facts and information. There are excellent descriptions, two fine diagrams and splendid illustrations in half-tone and color.

The arrangement is logical. The mushrooms are grouped according to the color of their spores, and under these major characteristics each genus and species described is labelled with an appropriate title as to its state of edibility. Some are labelled "eminently edible," others "edible and delectable," others "edible" and still others "edible but tough." The poisonous ones are also appropriately labelled and there is an excellent introductory chapter about mushrooms and about their methods of collection and preservation. There is also one of the finest chapters on cooking mushrooms that has ever been written. This last chapter includes many interesting recipes, not only applying to the cooking of mushrooms in general, but also for cooking certain particular species.

There has long been a need for just such a book as this. It should achieve great favor with all mycologists and nature lovers, as well as with interested laymen. The author has ably achieved his purpose and the result is a book which is unique, interesting and stimulating.

MILTON HOPKINS

PLANT GALLS AND GALL MAKERS. By E. P. FELT. *Comstock, Ithaca. 1940. Price $4.00.*

More than 2,000 insect-produced galls have been reported from North America and although every student of biology has seen hundreds of these he has felt helpless when he has attempted to determine the insect responsible for any one of them. The greatest number of galls (over 700) are formed on oaks by gall wasps (Cynipidae). The gall midges (Itonididae) produce nearly as many galls but no other plant genus harbors one tenth as many parasites as does the oak. Aphids and other insects produce a smaller number of galls, while mites are responsible for nearly two hundred. The present work discusses gall types, the ways in which galls develop, their biology and economic importance and the life histories of gall insects and describes methods of collecting galls and rearing the insects. The second and larger part lists and classifies the galls according to their plant hosts, and describes each briefly. The keys are practical and illustrations are excellent and ample in number. This book should be in every biological library.

A. O. W.

MECHANISMS OF BIOLOGICAL OXIDATIONS. By DAVID E. GREEN. *Cambridge, 1940. Price $2.75.*

The oxidation of metabolisms is not a process which occurs spontaneously; it requires the presence of highly specific protein molecules known as enzymes. Nor does oxidation always merely involve a simple union between atomic oxygen and an appropriate substance. Oxidation may involve at least three other types of reaction, e.g. the loss of an electron, the loss of hydrogen, or the addition of water with the loss of hydrogen. This book summarizes the present state of our knowledge of the reactions catalyzed by six principal groups of enzymes, classified according to their prosthetic groups. A chapter is devoted also to enzymes whose prosthetic groups have not yet been isolated. Each chapter is followed by an adequate bibliography in which especial attention has been given to work reported during the past five years.

A. O. W.

THE THEORY AND PRACTICE OF SEMIMICRO QUALITATIVE ANALYSIS. By G. B. Heisig. *W. B. Saunders Company. Philadelphia. Price $2.50. 1943.*

A text which can be used as a review of general chemistry and at the same time be used as an introduction to Qualitative Analysis. It can be divided into work units to fit the semester courses in the new accelerated program in which our schools and colleges are now engaged. The book is divided into two parts. The first part is theoretical and deals with Solution and Ionization, Chemical Equilibrium, Application of the Law of Mass Action to Saturated Solutions, Oxidation and Reduction, Complex Ions and the Colloidal Condition, Hydrogen Sulfide as a Precipitating Agent and the Solution of Sulfides, Hydrolysis and Amphiprotic Substances, The Activity Concept. The second part is experimental and presents the analysis of cations. The material presented is there to acquaint students with the properties and reactions of the ions of the twenty-four common metals and the anions of twenty-four common acids. The material presents the concepts of Debye, Brnsted and Werner. Comprehensive questions are given at the end of each chapter to help the student review the material.

E. Higbee

TEXTBOOK OF BIOCHEMISTRY. By Benjamin Harrow. 3rd Edition. *W. B. Saunders Co. Price $4.00. 1943.*

The third edition of this book has been written to meet the changes that occur with the rapid advances that are constantly being made in biochemistry. Material has been added on clinical, and industrial applications of biochemistry as well as a chapter on sulfa drugs and arsphenamine. Some other changes deal with Nylon, treatment of viruses with new electron micrographs, the enriching of foods and nutritional problems of the war. The references found at the end of each chapter call the students attention to articles or reviews of the articles which will add to the material of the text and help the student attain an idea of the experimental method of approach. The subjects are explained in a simple direct method so the student does not have difficulty in grasping the information presented.

A text which will cover the needs of a course in biochemistry for general college students as well as dental and medical students.

E. Higbee

RACE, REASON AND RUBBISH. By Gunnar Dahlberg, Translated by Lancelot Hogben. *Columbia University Press, New York, 1942. Price $2.25.*

This book deals with the biological aspects of the race problem, and the first half is devoted to an especially clear and readable presentation of the fundamental facts of genetics. The reader who is familiar with those facts may well begin his reading with Chapter 6 in which the discussion of human gene frequency and the influence of selection, inbreeding, assortative mating, the isolate effect and mutation upon the composition of human populations. Some of the interesting conclusions reached are that we can do little toward the eradication of rare defects but that at the same time we cannot by our stupidity stamp out advantageous characters, and that, on the whole, the partial elimination of the isolate effect by modern migration and intercommunication has resulted in physical and intellectual improvement of the human race. The fallacies of "Nordic superiority," "the pure race" and "the Jewish question" are exposed and the reader is not surprised to find that the word "Rubbish" in the title refers to these concepts.

The author is the eminent director of the State Institute of Human Genetics in the University of Upsala.

A. O. Weese

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